

ABSTRACT OF THE DISCLOSURE

A semiconductor optical device includes a semiconductor substrate and a stacked body formed by at least a first cladding layer, an active region
5 and a second cladding layer; wherein both sides of the stacked body are buried by a burying layer formed by a semi-insulating semiconductor crystal; the burying layer includes a first layer that is placed adjacent to both sides of the stacked body
10 and a second layer that is placed adjacent to the first layer; the first layer includes Ru as a dopant; composition of the second layer is different from the composition of the first layer, or a dopant of the second layer is different from the dopant of
15 the first layer. The device can also be configured such that the width of the active region is smaller than the width of the cladding layers of the stacked body; and a Ru-doped semi-insulating layer is provided in a space between the burying layer and
20 the active region in both sides of the active region.